

CLAIMS

1. A method for surface toughening of a ceramic product comprising, forming uniformly distributed linear dislocation structure in the sub-surface regions of the ceramic product by using abrasives composed of fine particles having convexly curved surface and having an average particle size of $0.1\mu\text{m}$ to $250\mu\text{m}$ and a Vickers hardness (HV) of 500 or more and of a hardness (HV) of the ceramic products +50 or less.

2. The method for surface toughening of a ceramic product of claim 1, wherein the plastic working is carried out by shot blasting pressure of 0.1 to 0.5MPa, shot blasting speed of 20m/sec to 250m/sec and shot blasting time of 0.1sec/cm² or more to 60sec/cm² or less.

3. The method for surface toughening of a ceramic product of claim 1 or claim 2, wherein the dislocation density of uniformly distributed linear dislocation structure in the sub-surface regions of the ceramic product is in the range of from 1×10^4 to $9 \times 10^{13} \text{ cm}^{-2}$.

4. A ceramic product possessing the structure whose dislocation density of uniformly distributed linear dislocation structure in the sub-surface regions of the ceramic product is in the range of from 1×10^4 to $9 \times 10^{13} \text{ cm}^{-2}$.